These differences between Pintor and Torrella were developed as they began to think about the way in which the French Disease was spread. If the cause of the disease was astrological, or God's anger, would it go away when the first cause no longer operated? Experience was showing that the disease passed from one person to another by what looked like secondary causes, and the problem was to find out how this happened and what could be done about it. Pintor gave much more attention to astrology than Torrella.[65] The universality of the French Disease seemed good evidence of a universal cause. The sophistications of astrological theory could explain (with hindsight, Torrella said) why the conjunction of 1483 had taken over ten years to produce its effects and why it affected some people and regions more than others. Pintor believed that it was astrological reasons that determined that the symptoms should first appear in the genitals. It was a one-to-one relationship: the configuration of the planets has a 'whole property' or 'specific power' of generating the disease. We cannot know this power in the same way as we know the manifest action of the elementary qualities of standard school natural philosophy: herein lies their occultness. On this basis Pintor believed that the French Disease would disappear in the year 1500.[66]

But the theory of medicine available to Pintor did not deny contagion, and he had the resources to join the dialogue between the doctors and the civic authorities, whom the spread of the disease was teaching some severe lessons. He explained it by claiming that an infected person corrupts the air around him in just the same way as the stars do, and that proximity to such a person doubled the chance of contracting the disease. His practical advice on avoiding the French Disease was to go away from centres of its occurrence, and seek out low-lying spots where the air is thicker and less open to celestial influence.[67]

Torrella in contrast emphasized contagion. He held that some material was passed from one victim to the next, either by skin contact or indirectly, for example by means of bedclothes. He denied that there was any general corruption of the air, as Pintor had said, but allowed an airborne contagion on an individual basis. Wet-nurses could transmit the matter of the French Disease to their sucklings, he held, but as his name for the disease testifies, he thought that most infection came about from sexual contact. His main advice on avoiding the disease was to avoid infected women (all his advice is directed to men). He also argued political and civil action, that is, that the prostitutes suffering from the disease should be rounded up and kept in a hospital until cured.[68]

So the main difference between the two physicians was that Torrella emphasized the material nature of the disease. The French Disease had its own matter, passed on in contagion. Pintor in contrast, emphasized the hidden nature of the cause of the disease. Neither author wanted to avoid the standard medical explanation that disease was an imbalance or corruption of the humours, and Pintor held that it was this that was caused by the occult influences and in turn caused the symptoms of the disease. It was also common medical practice to attempt to modify and evacuate the 'peccant' humour by bleeding or encouraging one of the body's natural evacuations. In an eruptive disease like the French Disease it was held that what was discharged from the pustules or ulcers was the modified peccant humour, so the appearance and opening of the swellings in the French Disease was welcomed. The physician then helped nature's evacuation by attacking the pustules with abrasive and corrosive substances.

But their different theoretical positions led to very different kinds of practice. Pintor, in elaborating on the third species of *variola* that constituted his *aluhumata*, made the pain of the French Disease its chief distinguishing characteristic. He believed that the pain alone could kill the victim and was not, therefore, simply a symptom or sign of the disease; it was part of its essence. Accordingly Pintor advocated the use of narcotic and sedative remedies. In practice these were ointments containing mercury in some form. In some the mercury was prepared by burning and was extinguished by the 'saliva of a fasting person'. Sometimes the danger of the mercury was lessened, thought Pintor, by an admixture of medical simples. His authorities here are not the classical writers but the Latin and Arabic and surgical writers (we can recall that he had a partly surgical background). Some of his narcotics were taken internally by his patients. He knew very well that there were great dangers in this, but it was absolutely central to his position as a learned and rational physician. The mercurial remedies were surgical in origin and continued to be used by empirics. For professional reasons a physician like Pintor denigrated the empirical use of mercurials as dangerous. He had to maintain it was only with the knowledge of the physician that mercury could be used safely. Knowledge of its powers, knowledge of the patient, of doses, times, seasons and all the apparatus of learned medicine, was what made mercury safe in the doctor's hands, argued Pintor. Internal application of mercury was a final resort, after the failure of external remedies and when the patient is beginning to weaken: when the skill of the physician is most needed.[69]

Pintor believed that pains of *aluhumata* were partly due to a deficiency of innate heat. He accordingly recommended 'partial baths' in which the painful limb could be bathed in hot water or olive oil. The expectation was that the external heat increased the natural heat to the point where it could again begin to expel the morbid matter.[70] If the

matter was particularly recalcitrant and the pain extreme, then Pintor proceeded to cautery. This was an attempt to destroy the morbid matter directly in the pustules, which were attacked either by 'actual' cautery – an iron hot from the fire – or 'potential' cautery: caustic ointments.[71]

Torrella's beliefs led him to another direction. Like Pintor he believed that the morbid matter had to be evacuated. But because he had made the morbid matter of *pudendagra* something outside the normal spectrum of disturbed humours, it needed a different technique of evacuation. From 1497 Torrella used the 'dry stove', the *stufa sicca*. At first it was simply a hot fire to make the patient sweat, by which Torrella hoped to evacuate the peccant humour. By 1500 he was recommending that the stove should be purpose built: it consisted of a wine barrel big enough for the patient to sit in. Hot stones were placed on a bed of sand at the bottom and the whole was covered with cloth. Torrella made his patients sweat 'for five days without any breakfast' to get rid of the poison and prevent more being formed from ingested food. In fact the regimen consisted of one or more sessions of an hour or so every day for a period perhaps as long as a week. It depended entirely on Torrella's belief that the morbid matter was humid and would come away in the sweat.[72]

In contrast, Pintor believed that the matter of the disease was dry and cold, like a melancholic humour, and that a dry heat would simply make it even drier and more difficult to move. He urgently warned against the use of the dry stove at any stage of the disease.[73] We have seen that he preferred a local bath, a half-barrel of warm oil. He also used his mercurials to promote sweating, taking care that they were applied in moist ointments to avoid drying the morbid matter further. With this precaution Pintor, too, could seat his patients close to a fire to encourage them to sweat. For eight days at a time he anointed the painful parts of the patient twice a day, warming his hand before the fire before doing so to open the pores and allow the ointment to reach the membranes round the bones.[74]

We have now looked briefly at Pintor's and Torrella's cultural allegiances and the differences that arose from them as they faced the French Disease and evolved strategies to deal with it, to maintain their own position and the professional image of the learned and rational physician and, in short, to solve the problems they faced. We can usefully end with a glance at an actual case history that illustrates all these points.

It is the case of Bertomeu Martí. Born in the same Valencian town as his friend Rodrigo Borgia, he was made a cardinal in 1496, during Rodrigo's pontificate as Alexander VI.[75] By March 1499 he was ill with the French Disease and in the hands of the Pope's doctors. Pintor was

impressed by the cardinal's terrible pains, which may have some bearing on the doctor's later thinking on the nature of the disease. Clearly there was the pressure of expectation on the Pope's doctors. What they did at first is not clear; but the cardinal accepted from a Portuguese visitor an ointment consisting in part of pig's fat, pine resin, mastic, litharge and quicksilver. It was given with some secrecy and probably the visitor was not medically qualified. At all events the cardinal took the precaution of asking some physicians, including Pintor, what they thought of it. They thought that it contained too much mercury: the physician's usual reaction to empirics and their remedies. But the cardinal was desperate and the Pope's physicians were unsuccessful, so he used the ointment, with fatal results.[76]

The physicians disagreed about what killed the cardinal. Pintor, who was in favour of mercury without reservations, argued that as unlicensed practitioners often did, the cardinal had inappropriately used this and another ointment so that his radical moisture had been damaged and his natural faculties destroyed.[77] Torrella, who had already condemned some mercurial remedies, was rapidly abandoning others because Pintor was claiming success with them, and now he behaved in a more cautious way about the use of this remedy than he used to do before, simply blaming the mercury.[78] Both thought that the secrecy associated with the remedy smacked of empiricism and as learned physicians might, attacked the promises held out by the visitor. As combatants in the physicians' civil war, both used even death to promote his own views.

Post-mortems and anatomical rationality

One of the principal characteristics of medieval western medicine was its anatomy. Perhaps no other culture practised systematic dissection of the dead human body for teaching purposes. Whether or not his knowledge of the inside of the body made him a better doctor, there were a number of advantages to the medieval and Renaissance physician in basing his medicine on anatomy. It was consistent with the practice of Galen, the great rationalist interpreter of Hippocrates. The public dissections were dramatic statements about the kind of medicine practised by and limited to university-trained physicians. It gave them a special kind of rationality, based on Aristotelian and Galenic doctrines about the relationship between form and function. It marked them off from the empirics, apothecaries, often even surgeons and those who had not had a university medical education with its anatomies. The physician, who had always used his professional learning to secure business, now had a special kind of learning to add to his special rationality.

Anatomically minded doctors found that they were expert witnesses in the law courts. Indeed the legal need to know the cause of death, for example, may have been one of the reasons why dissection began, probably in the late thirteenth century; it presupposes that something physical can be found in some sort of causal relationship with the outcome.

This remained part of medical doctrine at the time when practitioners were thinking about the French Pox. One of them recalled a case given by Gentile da Foligno in the first half of the fourteenth century, where a patient had died through an accidental overdose of mercury. Perhaps the story was now repeated because mercury was a treatment for the French Disease, and many held it to be dangerous; at all events in Gentile's story the doctors dissected the body and attributed death to the congealed blood they found near the heart.[79]

The doctors of the late fifteenth and the sixteenth-centuries stoutly maintained that it was only their detailed knowledge of normal anatomy, learned by dissection, that gave them the knowledge of pathological appearance. Their particular kind of rationality and learning was a resource and their strategy was to secure professional advantage over other kinds of practitioners by making obvious the superiority of their resources. It was customary for the university physicians to berate the 'empirics' for their failures and the danger they presented to the public. One of their arguments was that the nostrums, specifics and secret remedies of the empirics had no known means of action. It was in the interest of the physicians to make manifest the means of action of their medicines in terms of their rationality and learning. Since the latter were partly anatomical, the doctors found it good to be able to find in the body a material, visible cause for the French Disease.

Many found such a thing in a pathological material discovered in the dissected body where the pains had been in life. We know that a convicted criminal was executed in Ferrara on 11 April 1497, just after the dispute there. He had suffered from the French Disease and was dissected soon after his execution.[80] This much was known to one of the contenders in the dispute, Dall'Aquila, but we do not know the result of the dissection, nor what the anatomists' expectations were.[81] There were dissections too in Rome, for many patients at the Incurabile hospital of San Giacomo died from the illness. Pietro Andrea Mattioli (1500–77) (speaking as the physician 'Andreas' in his dialogue) dissected a number of victims, looking for a viscid material that he called *virus*. He did not always find it.[82]

Others were more positive. They were looking for a viscid or phlegmatic matter for two reasons. First, the resistance of the French Disease to cure invited them to believe that its material cause must be very difficult to purge, and a phlegm with some characteristics of melancholy

was traditionally difficult to remove. Second, it seemed that nature was attempting to expel this substance through the pustules and sores of the disease. The same matter then, was the inner cause of the disease and the exudation of the pustules, where its character could be recognized. It seemed plain that this material cause of disease was located where the pains were in life, that is, the bones and especially joints and in fibrous parts. The anatomists therefore had a fairly good idea of what it was they were looking for and where to find it. Nicolò Massa (d. 1569), dissecting in 1524, found what he was looking for in a hard or sometimes soft viscous matter on the membrane of the bone of the leg. Nicolò Massa was a well-known anatomist and physician, and had a good knowledge of normal anatomy. He therefore felt obliged to recognize the unnatural white substance as the material cause of the disease.[83] The same expectation of finding a material cause is apparent in the works of another well-known author, Gabriele Falloppio (1523–62) (and in those of the lesser-known Giovanni Pascale (*fl.* 1534), both writing on the French Disease).[84] The connection between the matter expelled in the running pustules of the disease and its inner material cause were strong enough for authors like Leonhard Schmaus and Antonio Scanaroli (*c.*1450–1517) to declare that when no pustules were visible on the surface they could be found within the body, revealed by dissection after death.[85]

But while the learned physicians agreed enough within their anatomical rationality to present a united front to the empirics, their civil war continued with the strategies they were able to draw from their resources. Traditionally diseases had been regarded as imbalances of the elementary qualities of the humours and parts. A complexional disease of this kind did not presuppose the presence of a special matter of disease, for the changed qualities inhered in extant matter.

Trapolino, a major teacher of medical theory at Padua, did not give much attention to what was found close to the bones at post-mortem examination (and he denied that it was phlegmatic) and pointed instead simply to the attenuation to be observed as a symptom in the limbs. A matter of disease was less important to him and he accordingly denied the existence of internal pustules. For Trapolino, the physical matter of disease and the manifest qualities of complexional change were inadequate as the basis of a comprehensive account of diseases and their cures. His orientation was towards 'subtlety', powerful forces that acted in unknown and unAristotelian ways: we met them above as 'occult' forces. He suspected that there might be a whole unknown practice of medicine still to be discovered and based on the wonderful properties of plants and minerals. He had seen half-healed ulcers in a sheep's lung, and concluded that the sheep had begun to cure itself by eating a

particular herb; but the doctors did not know what it was. Nor did the doctors know why epilepsy was cured by paeony, or why a leper should have been cured by wine in which a viper had drowned. The mechanism of such actions was unknown – it was *occultus* – and the effects could only be learned by experience (rather than being predicted by reason).

Trapolino was aware that the empirics too relied on experience (rather than reason), used medicines that were specific to the disease (rather than to the patient) and which had an unknown means of action. Like other rationalist and learned physicians, Trapolino wanted his kind of medicine to be seen to be better than that of the empirics, but his strategy was not to condemn the empirics out of hand. Instead, he thought that rational medicine should embrace whatever was valuable in empirical practice and 'medicalize' it by using it in conjunction with rationalist practice. He even accepted that sometimes barbers and empirics treated the French Disease more successfully than the most learned man. But Trapolino the learned and rational physician, knew why this should be so: there are wonderful powers of natural things, some quite unknown. The ancients (and therefore the learned physician) could not have known all these, nor their mode of action (who knows how lettuce juice reduces a swelling of the tongue?). Many such effects are accidental or contingent and therefore impossible to know *a priori*. They cannot be known *certitudinaliter* or *scientifice*, that is, with Aristotelian causality.

In a word, Trapolino thought that the traditional medicine of the ancients was incomplete and could be added to. His rationalism was wider than that of the conventional doctor who confined himself to the manifest qualities and causes of the Aristotelian–Galenic learned apparatus. Among the moderns he admired Pietro d'Abano, from whose *Conciliator* came some of his examples of 'subtleties' in action. He also admired Gentile da Foligno as a theoretician – *speculator* – and quotes from him some modern observations of things unknown to the ancients, like a worm generated between the skin and the flesh, discharge of stones from the gut and the little animals in the lungs that cause coughing as they creep about. The French Disease, he said, was of the same order of things, a new disease quite unknown to antiquity. In a medical world like Trapolino's, in which specific remedies could act in hidden ways, their results knowable only by experience, where the daylight hours might reveal new healing powers in things and the night might contain revelations about such things by angels or demons, the French Disease was not to be limited to traditional explanations.[86]

Subtleties and infections

In these ways Trapolino was exhibiting a medicine that added a new dimension to the anatomical and manifest-quality rationality that was traditional. The key word was subtlety, specifics with unknown modes of action. Astrological causes were a species of subtle action, and Trapolino gave serious and sympathetic attention to the views of Pistoris on the astrological causes of the French Disease and on the astrological times for giving drugs. Again, where the mode of action was unknown, traditional reason could not predict the effect. Trapolino and Pistoris asserted that only experience could tell: practical medicine was a *habitus experimentalis*, and some doses, some kinds of medicine, the times and places of their use, cannot be demonstrated or taught in speech or writing. Trapolino again turns to the high scholastics – Gentile de Foligno, Jacopo da Forli and Turisianus, known as Plusquam Commentator – for an elegant demonstration that practical medicine consists of an infinite series of particulars of observation. But infinity is unknowable and the particulars belong to sensation, not reason (and they cannot be built up into universals, with which true knowledge deals). This is why, says Trapolino, the admirable Simon Pistoris declares that such things do not appear in books.[87]

It was not always to the advantage of the learned and rational physician to argue that there were parts of medicine that could not be written in books (and were therefore not available to the whole of the Western rationalizing tradition). To argue that experience alone could teach certain things and that medicines could act in an unknown way and specifically to a disease, looked close to empiricism. It is arguable that the physician – whose strategy had always been based on his learning and rationalism – was forced into a position like Trapolino's by experience of infectious diseases. The Black Death, the English Sweats and the French Disease were all things that swept out of some known part of the world and affected large numbers of people. In contrast, Galenic medicine centred on the individual patient and on how all his idiosyncrasies reacted with the environment to make him ill or well. Although pestilences were not unknown in the ancient world and could be found in the literature, it was the model of the individual patient, his exercise, diet, sleeping, age, sex, complexion, vigour, and the season of the year, time of day, geographical location and so on, on which the physician could employ the full extent of his learning and rationality.

But to see the French Disease as a thing created an entity and provided an ontological perception of a disease. It was a natural view and the empirics, as the physicians knew to their cost, had taken advantage of the situation with their disease-specific remedies and were often seen

as more successful than the physicians. Again, the physicians had to do something about it. They had to bring the French Disease into rational and learned medicine. They had to accommodate the view that the French Disease was an entity, and had a capacity, like the Black Death and the English Sweats, to pass rapidly from one person to another. The ontological view of the disease was expressed when a number of physicians came to say that the disease passed through people, and even that it was made weaker in doing so.

The strategy employed by the physicians to do these things was to develop a piece of Galenic theory that had been rather neglected. Galen, in rationalizing the pithy wisdom of Hippocrates, had used a natural philosophy that was largely Aristotelian. It dealt largely with the four causes, accidents and essence, matter, form and elementary qualities. All of these were open to observation and reason and in the sixteenth century were called 'manifest'. But as a doctor Galen knew that some things had effects on the body that were out of all proportion to their manifest qualities. Small amounts of poisons for example could produce results that by their speed and scale could not be due to the action of normal qualities. Galen said that in those cases the material acted not by its complexion but by some virtue inherent in its 'whole substance'. He did not offer a detailed explanation of why this was so.[88]

There were a number of other things that acted in related ways. The reputed stare of the basilisk, the poison of the scorpion, the stupefying effect of the electric eel and the bite of a mad dog were all of this nature. These things were well known to doctors and were increasingly of interest to natural philosophers who were not content with an Aristotelian view of things. The doctors began to think that if infectious diseases were entities, then they too could have 'whole substance' action. It meant of course that they had to have substance, a term that still implied some sort of Aristotelian combination of matter and form. It was not difficult to imagine that the 'matter of disease' which was both evacuated from the body in the living pustules and found in the dead body where the pains had been, was related to or was the same as the 'substance' of the disease. A third correspondence was sometimes also found, that the matter of disease, its substance or entity, was the means of infection. Some writers treat on this matter as a sort of yeast, passing from body to body and converting their substance into its own. Others used the image of seeds, so that the disease was like a plant, coming to maturity and spreading itself by means of forms of its own substance. Others again, like Falloppio, took the Galenic doctrine of 'whole substance' and applied it to the disease and also to the body, in its reaction to the disease. Since whole-substance action was explicitly an exception to normal natural-philosophical explanation, Falloppio

effectively freed himself from the need to follow 'manifest' arguments and qualities in the whole subject of infectious diseases.[89]

Conclusion

It is arguable then that experience with infectious diseases from the Black Death to the French Disease forced doctors to find new explanations and so changed the nature of medicine. To a certain extent they practised in the medical marketplace and needed theory as they traditionally had, but now of a new kind. But we have seen that not all physicians were the same. The Hellenists urged the superiority of Greek medicine, which centred on the patient, had little about infectious diseases and nothing about strategies to control them like quarantine, hospitals or locking up a town's prostitutes, all live issues in the Western Middle Ages. The Hellenists did not succeed in driving the Arabic authors Avicenna and Rhazes from the medical curriculum, and these authors provided the doctors of the medical establishment with different resources – they contained more on infectious diseases – with which to further the claims of university medicine. Doctors who believed in astrological causes had a further example of 'subtle' or hidden action and another strategy with which to negotiate their medicine into the marketplace; but by the end of the period covered by this book this strategy was beginning to fail, for astrology came to look like an impious encroachment on God's power and man's free will. Yet another group of doctors were those who were impressed by the new Platonism, which gave a whole new world picture, of which cosmic sympathies and antipathies were one feature. Neoteric theories based partly on such doctrines sometimes included arguments about immaterial infection which ran counter to the general perception of disease entity and material transmission; but these ideas did not figure large in practice. Doctors giving advice to individuals or to groups like hospitals and towns needed a theory that was intelligible at a fundamental level. People understood about seeds, yeast and poisons. They knew that tinder needed but a spark to create a fire and understood medical theories that spoke of *fomes* within the body set alight by an infective spark.[90] They accepted that a material poison could remain dangerous when inactive in a container, and so understood that infection could be indirect, lurking in a victim's clothes or possessions. The doctors controlled the theory and the situation as they did traditionally, by asserting that their own mastery of the detail of the theory gave them the unique right to offer practical action and advice; but they had to have some such theory by the collective experience of epidemic infections.

Notes

1. On the arrival and early years of the French Disease in Europe, see Jon Arrizabalaga, John Henderson and Roger French, *The Great Pox. The French Disease in Renaissance Europe*, New Haven and London, Yale University Press, 1997, particularly pp. 20–170.
2. The term 'pox' is also used, as a vernacular term that flourished in the absence of a formal name. The term was early used by Thomas Paynel, a canon of Marten Abbey, who translated Ulrich von Hutten's tract on *morbus gallicus*: his translation became one of the few books in English on what Paynel called 'the frenche pockes': Ulrich von Hutten, *Of the Wood called Guaicum*, trans. T. Paynel, London, 1536.
3. Historians have tended to accept uncritically the term 'syphilis' since the important studies on the earliest printed and manuscript literature about the French Disease that Karl Sudhoff published during the first quarter of this century. See among others his works, *Graphische und typographische Erstlinge der Syphilisliteratur aus den Jahren 1495 und 1496*, Munich, C. Kuhn, 1912; *Aus der Frühgeschichte der Syphilis. Handschriften- und Inkunabelstudien epidemiologische Untersuchung und kritische Gänge*, Leipzig, Barth, 1912; *Zehn Syphilis Drucke aus den Jahren 1495–1498*, Milan, R. Lier, 1924 (English version adapted by Charles Singer: *The Earliest Printed Literature on Syphilis, being Ten Tractates from the Years 1495–1498*, Florence, R. Lier, 1925). For the argument about the issue of relating pre-germ theory plague to post-germ theory plague, see Andrew Cunningham, 'Transforming Plague: the Laboratory and the Identity of Infectious Disease', in Andrew Cunningham and Perry Williams, eds, *The Laboratory Revolution in Medicine*, Cambridge, Cambridge University Press, 1992, pp. 209–44.
4. On the German religious perception of the French Disease see Paul A. Russell, 'Syphilis, God's Scourge or Nature's Vengeance? The German Printed Response to a Public Problem in the Early Sixteenth Century', *Archive for Reformation History*, 80, 1989, pp. 286–307, p. 293.
5. Coradino Gilino, *De Morbo quem Gallicum Nuncupant*, Ferrara, *c.*1497/98, fol. 1v.
6. On this see Alfonso Corradi, *Annali delle Epidemie Occorse in Italia dalle Prime Memorie Fino al 1850*, 5 vols, Bologna, Memorie della Società Medico-chirurgica di Bologna, 1865–92 (facsimile reprint: Bologna, Forni, 1972), vol. I, pp 338–60; vol. IV, pp. 212–54; vol. V, pp. 265–74.
7. On Charles VIII's invasion of Italy, see Ludwig von Pastor, *The History of the Popes from the Close of the Middle Ages*, 40 vols, London, Kegan, Paul, Trench, Trubner and Co., 1891–1953, vol. V, London, 1898, pp. 434–81; Cecilia M. Ady, 'The Invasions of Italy', in Denys Hay, ed., *The New Cambridge Modern History. Vol. I: The Renaissance, 1493–1520*, Cambridge, Cambridge University Press, 1961, pp. 343–67; Lauro Martines, *Power and Imagination. City-States in Renaissance Italy*, Harmondsworth, Penguin, 1979, pp. 387–415.
8. On all these events see Nicolò Leoniceno, *Libellus de Epidemia quam Vulgo Morbum Gallicum Vocant*, Venice, 1497, sigs. d1r–drv; Antonio Benivieni, *De Abditis Nonnullis ac Mirandis Morborum et Sanationum Causis*, Paris, 1528, *Observatio* 57 (*Fames Valida*), fol. 12v; Corradi, *Annali*, vol. I, pp. 349–3; *Diario Ferrarese dall'Anno 1409 sino al 1502 di Autori incerti*, ed. G. Pardi, in L. A. Muratori, ed., *Rerum Italicarum Scriptores*, Città di Castello-Bologna, N. Zanichelli, 1928–33, vol. 24/27 (henceforth *DFA*), pp. 165–208 (*passim*); Francesco Rococioli, *Libellus de Monstro Romae in Tyberi Reperto anno Domini MCCCCLXXXXVI*, Modena, 1501; and Pastor, *The History of the Popes*, vol. V, pp. 480–81.
9. On the relationship between the Duke of Ferrara and the Dominican friar, see Luciano Chiappini, 'Ercole d'Este e Girolamo Savonarola', *Atti e Memorie della Deputazione Ferrarese di Storia Patria, serie II*, 7 (3), 1952, pp. 45–53; Werner L. Gundersheimer, *Ferrara. The Style of a Renaissance Despotism*, Princeton, Princeton University Press, 1973, pp. 197–9; Jacob Burckhardt, *The Civilization of the Renaissance in Italy: An Essay*, London, Phaidon Press, 1965, pp. 301–3. For the letters exchanged between them see Antonio Cappelli, 'Fra Girolamo Savonarola e Notizie Intorno il suo Tempo', *Atti e Memorie delle RR. Deputazioni di Storia Patria per le Provincie Modenesi e Parmesi*, 4, 1868, pp. 301–406 (*passim*); Roberto Ridolfi, *Le Lettere di Girolamo Savonarola*, Florence, Leo S. Olschki, 1933, pp. 75, 104–5, 110–13, 117–19, 156–7, 180–81, 219–20, 228–31, 235–9; and Chiappini, 'Ercole d'Este'.
10. The earliest evidence from this city was a ducal payment order on 13 October of four marchesina pounds to the master surgeon Giovanni Giusti 'as a stipend for curing and liberating from the French Disease' (Archivio di Stato di Modena, Archivio Segretto Estense, Camera Ducale Estense, Mandati, Registro 36, fol. 163r). Ercole's sons were identified as sufferers from the French Disease among others by the *DFA*, pp. 204–5, 219, 224, 240.
11. On the settlement of the Confraternity of Saint Job at Ferrara, see Archivo Archivescovile di Ferrara, Compagnia di S. Giobbe di Ferrara, A4 (20 March 1502), A5 (20 March 1505). For the peculiar medical treatment prescribed to Alfonso, see Archivio di Stato di Modena, Archivio Segretto Estense, Archivio per Materie, Medici e Medicina, 19 [letter of 29 March 1498]. On the figure of Job in the Jewish and Christian religions, see S. Terrien, 'Job', in Mircea Eliade, ed., *The Encyclopedia of Religion*, 16 vols, New York, Macmillan, 1987, vol. 8, pp. 97–100; J. R. Baskin, *Pharaoh's Counsellors. Job, Jetho, and Balaam in Rabbinic and Patristic Tradition*, Chico, Cal., Scholars Press, 1983, pp. 7–43, 129–43; C. Kannengiesser, 'Job (Le Livre de)', in M. Viller, assisted by F. Cavellera and J. de Guibert, eds, *Dictionnaire de Spiritualité Ascétique et Mystique. Doctrine et Histoire*, Paris, Béauchesne, vol. 1– (1937–), vol. 8 (1974), cols 1201–25, p. 1201; L. L. Besserman, *The Legend of Job in the Middle Ages*, Cambridge, Mass., Harvard University Press, 1979, pp. 64–5; L. Menzies, *The Saints in Italy; a Book of Reference to the Saints in Italian Art and Dedication*, London, The Medici Society Ltd, [1924], pp. 137–8.
12. During the first five years of the sixteenth century at least two medical practitioners were employed by the authorities of Ferrara as 'specialists' on the French Disease, namely Maestro Ferrante da S. Domenico in 1501 'to operate on many and diverse diseases, above all on the disease of those who have been infected through their lower parts'; and Zan Jacomo da Padoa, medico del Mal Franzoso, in 1505. See Alfonso Corradi, 'Nuovi documenti per la storia dell malattie veneree in Italia dalla fine del quattrocento alla metà del cinquecento', *Annali Universali di Medicina e Chirurgia*, 269 (808), 1884, pp. 289–386: p. 347; Giulio Bertoni, *La*

Biblioteca Estense a la Cultura Ferrarese ai Tempi del Duca Ercole I (1471–1505), Turin, E. Loescher, 1903, p. 192.

13. See R. K. French, 'The Medical Ethics of Gabriele de Zerbi', in Andrew Wear, Johanna Geyer-Kordesch and Roger French, eds, *Doctors and Ethics: the Earlier Historical Setting of Professional Ethics*, Amsterdam, Rodopi, 1993, pp. 72–97; see p. 74.
14. Whether or not the physicians' inability to cope with the disease lessened public confidence (which has been disputed) it could hardly have increased their reputation. Contemporary diaries repeatedly echoed the notion that doctors were unable to treat the disease. See, e.g., *DFA*, pp. 198–9, 204–5, 219; Luca Landucci, *Diario Fiorentino dal 1450 al 1516 ...*, Iodoco del Badia, ed., Florence, Biblioteca di Carteggi, Diarii, Memorie, 1883, pp. 132, 141.
15. 'Methodical' and 'canonical' modes of practice were discussed later in the sixteenth century and so take us beyond the purposes of this chapter in discussing the arrival of the French Disease. For an extended discussion on these modes of practice see Arrizabalaga, Henderson and French, *The Great Pox, passim*.
16. For the image of the doctor, created by his learning, see French, 'Medical Ethics'.
17. On astrology, see D. Kurze, 'Popular Astrology and Prophecy in the Fifteenth and Sixteenth Centuries', in P. Zambelli, ed., *'Astrologi Hallucinati'. Stars and the End of the World in Luther's time*, Berlin and New York, Walter de Gruyter, 1986, pp. 178–93: p. 180. See also H. R. Hammerstein, 'The Battle of the Booklets: Prognostic Tradition and Proclamation of the Word in Early Sixteenth Century Germany', in Zambelli, *Astrologi*, pp. 129–151: pp. 129, 131. On astronomical terminology see for example J. Tester, *A History of Western Astrology*, Woodbridge, Boydell Press, 1987; W. Shumaker, *The Occult Sciences in the Renaissance*, Berkeley and London, University of California Press, 1972, pp. 1–59.
18. See P. Borgarucci, *Methodus de Morbo Gallico*, Chapter 2, in Luigi Luigini, *De Morbo Gallico Omnia Quae Extant apud Omnes Medicos Cuiuscunque Nationis*, 2 vols, Venice, Zilettus, 1566–67, vol. 2, p. 150.
19. Lorenz Friese, *De Morbo Gallico Opusculum*, in Luigini, *De Morbo Gallico*, vol. 1, p. 299.
20. See Borgarucci in Luigini, *De Morbo Gallico*.
21. Mercury was already recognized as an efficient remedy for skin disorders by Arab medical authors like Rhazes and Avicenna. See, e.g., Rhazes, *Ad Regem Mansorem*, lib. 5, cap. 28; lib. 6, cap. 15 (Basel, 1544, pp. 125, 153); Avicenna, *Canon Medicinae*, lib. 2, tract. 2, cap. 47 (*argentum vivum*), lib. 4, fen 7, tract. 3, cap. 7 and 27 (Venice, 1527, fols 77v, 386r–v, 388r) Since the twelfth century its therapeutical effectiveness in this kind of complaint had been endorsed in Latin Europe by many university-trained physicians and surgeons, among them Petrus Hispanus, Guglielmo da Varignana, Arnau de Vilanova, Bernard de Gordon, Guy de Chauliac and Valescus de Taranta. On the history of mercury and of its therapeutical applications, see Erna Lesky, 'Die Arbeiter und das Quecksilber', *Ciba Zeitschrift*, 96, 1959, pp. 3191–200; J. Schroeter, 'Quecksilber – und Quecksilberverbindungen im Wandel der Zeit', *Ciba Zeitschrift*, 96, 1959, pp. 3202–6; L. J. Goldwater, *Mercury: A History of Quicksilver*, Baltimore, York Press, 1972. On the treatment of the French disease with mercurial remedies, see Jean Astruc, *De Morbis Venereis*, Paris, 1736, pp. 131–232; G. S. Brock, 'An Early Account of Syphilis and of the Use of Mercury in its Treatment', *Janus*, 6, 1901, pp. 592–5, 645–7; Owsei Temkin, 'Therapeutic Trends and the Treatment of Syphilis Before 1900', *Bulletin of the History of Medicine*, 29, 1955, pp. 309–16, p. 311; Erna Lesky, 'Von Schmier- und Räucherkuren zur modernen Syphilistherapie', *Ciba Zeitschrift*, 96, 1959, pp. 3174–89; Juan Antonio Paniagua, 'Clínica del Renacimiento', in Pedro Laín-Entralgo, ed., *Historia Universal de la Medicina*, 7 vols, Barcelona, Salvat, 1972–75, vol. 4, p. 100.
22. On the guaiac wood see Robert S. Munger, 'Guaiacum: The Holy Wood from the New World', *Journal of the History of Medicine*, 4, 1949, pp. 196–229.
23. See Arrizabalaga, Henderson and French, *The Great Pox*, p. 253.
24. See Borgarucci in Luigini, *De Morbo Gallico*, vol. 1, p. 299; Friese in Luigini, vol. 1, p. 299.
25. See Antonio Benvieni, *De Morbo Gallico Tractatus*, in Luigini, *De Morbo Gallico*, vol. 1, p. 345.
26. See Borgarucci in Luigini, *De Morbo Gallico*, vol. 2, p. 150.
27. See French, 'Medical Ethics', p. 81.
28. See Johannes Benedictus, *De Morbo Gallico Libellus*, in Luigini, *De Morbo Gallico*, vol. 1, p. 148.
29. Munger, 'Guaiacum'.
30. Nicolaus Pol, *De Cura Morbi Gallici per Lignum Guaycanum Libellus*, Venice, 1535. For a critical edition and English translation of this work, see Max H. Fish, *Nicolaus Pol Doctor 1494. With a Critical Edition of his Guaiac Tract Edited with a Translation by Dorothy M. Schullian*, New York, The Cleveland Medical Library Association, 1947, pp. 56–93.
31. Leonhard Schmaus, *Lucubratiuncula de Morbo Gallico et Cura eius Noviter Reperta cum Ligno Indico*, Augsburg, 1518.
32. Munger, 'Guaiacum', pp. 42–4.
33. Pol, *De Cura Morbi Gallici*, pp. 56–9, 62–9.
34. Pol, *De Cura Morbi Gallici*, pp. 60–61.
35. Pol, *De Cura Morbi Gallici*, pp. 74–7.
36. Pol, *De Cura Morbi Gallici*, pp. 64–75.
37. Pol, *De Cura Morbi Gallici*, pp. 80–81, 74–7.
38. Pol, *De Cura Morbi Gallici*, pp. 80–81.
39. Pol, *De Cura Morbi Gallici*, pp. 74–7.
40. On the Fuggers and the trade of guaiac, see Fish, *Nicolaus Pol*, p. 46; Munger, 'Guaiacum', pp. 209–10; Walter Pagel, *Paracelsus. An Introduction to Philosophical Medicine in the Era of the Renaissance*, Basel, Karger, 1982, p. 24.
41. Ulrich von Hutten, *De Guaiaci Medicina et Morbo Gallico Liber Unus*, Mainz, 1519, sigs. c3r, d2v, d3r, d4v, e3v, g4r. Hutten's attitude to the medical profession and other monopolies was consistent with his Reforming beliefs. See, for example, Sam Wheelis, 'Ulrich von Hutten: Representative of Patriotic Humanism', in Gerhart Hoffmeister, ed., *The Renaissance and Reformation in Germany. An Introduction*, New York, Ungar, 1977.
42. On the Leipzig Faculty see K. Sudhoff, *Die medinische Fakultät zu Leipzig im ersten Jahrhundert der Universität*, Leipzig, J. A. Barth, 1909.

Some biographical details of Pollich are given in August Hirsch, ed., *Biographisches Lexikon der hervorragenden Ärzte aller Zeiter und Völker*, 5 vols + supplement, Berlin and Vienna, Urban and Schwarzenberg, 1929–35: vol. 4 (1932), p. 648. For Pollich's first thesis, see Karl Sudhoff, *Aus der Frühgeschichte der Syphilis. Handschriften- und Inkunabelstudien epidemiologische Untersuchung und kritische Gänge*, Leipzig, J. A. Barth, 1912, pp. 43–4.

43. Nicolò Leoniceno, *Libellus de Epidemia quam Vulgo Morbum Gallicum Vocant*, Venice, 1497. A facsimile of this text is reproduced by K. Sudhoff, *The Earliest Printed Literature*, pp. 119–82. On Leoniceno see among others Domenico Vitaliani, *Della Vita e delle Opere di Niccolò Leoniceno Vicentino*, Verona, Tip. Sordomuti, 1892; Daniela Mugnai-Carrara, 'Profilo di Nicolò Leoniceno', *Interpres*, 2, 1979, 169–212; Mugnai-Carrara, *La Biblioteca di Nicolò Leoniceno. Tra Aristotele e Galeno: Cultura e Libri di un Medico Umanista*, Florence, Leo S. Olschki, 1991.
44. Simon Pistoris, *Positio de Morbo Franco*, Leipzig, 1498. On Pistoris, see Hirsch, ed, *Biographisches Lexikon*, vol. 4 (1888), p. 617.
45. These tracts were collected and published by Conrad Heinrich Fuchs, *Die ältesten Schrifsteller über die Lustseuche in Deutschland von 1495 bis 1510, nebst mehrerer Anecdotis späterer Zeit, gesammelt und mit literarhistorischen Notizen und einer kurzen Darstellung der epidemischen Syphilis in Deutschland*, Göttingen, Dieterich, 1843. The sequence of theses and publication was as follows: (i) Pollich, *Utrum ex Corrupcione Aeris Causetur Francosica, Morbus Pestilencialis et Invadens*, 1496; (ii) Pollich supports Leoniceno, perhaps by thesis; (iii) Pistoris, *Positio de Morbo Franco*, 1498; (iv) Pollich, *Defensio Leoniceniana*, 1498; (v) Pistoris, *Declaratio Defensiva cuiusdam Positionis de Malo Franco Disputatae*, 1500; (vi) Pollich, *Castigationes in Alabandicas Declarationes D. S. Pistoris*, 1500; (vii) Pistoris, *Confutatio Conflatorum circa Positionem quandam Extraneam et Puerilem de Malefranco*, 1501; (viii) Pollich, *Responsio in Superadditos Errores Simonis Pistoris*, 1501.
46. On German humanism see for example Lewis W. Spitz, *The Religious Renaissance of the German Humanists*, Cambridge, Mass., Harvard University Press, 1963, particularly pp. 17 and 113; P. Joachimsen, 'Humanism and the Growth of the German Mind', in Gerald Strauss, ed., *Pre-Reformation Germany*, New York, Harper and Row, 1972, p. 162, Morimichi Watanabe, 'Gregor Heimburg and Early Humanism in Germany', in Edward P. Mahoney, ed., *Philosophy and Humanism. Renaissance Essays in Honor of Paul Oskar Kristeller*, Leiden, Brill, 1976, pp. 406–22; James H. Overfield, *Humanism and Scholasticism in Late Medieval Germany*, Princeton, Princeton University Press, 1984. On the difference between Hellenists and humanists see Roger K. French 'Berengario da Carpi and the Use of Commentary in Anatomical Teaching', in Andrew Wear, Roger K. French and Ian M. Lonie, eds, *The Medical Renaissance of the Sixteenth Century*, Cambridge, Cambridge University Press, 1985, pp. 42–74, 296–8; Roger K. French, 'Pliny and Renaissance Medicine', in Roger K. French and Frank Greenaway, eds, *Science in the Early Roman Empire: Pliny the Elder, his Sources and Influence*, London, Croom Helm, 1986, pp. 252–81.
47. See, for instance, Paul Oskar Kristeller, *Renaissance Thought and its Sources*, New York, Columbia University Press, pp. 29–30.

48. On Leoniceno see Note 43, above.
49. For Dall'Aquila's tract, which was written about 1497/98, although not published until more than a decade later, see Sebastiano Dall'Aquila, *Interpretatio Morbi Gallici et Cura*, in Marco Gatinaria, *De Curis Egritudinum Particularium Noni Almansoris Practica Uberrima ...* , Pavia, 1509 (henceforth *Interpretatio*), fols 184r–202v. On Dall'Aquila, see Jon Arrizabalaga, 'Sebastiano dall'Aquila (*c.*1440–*c.*1510), el "mal francés" y la "disputa de Ferrara" (1497)', *Dynamis*, 14, 1994, pp. 227–47, and the bibliography there referred to.
50. Coradino Gilino wrote his *De Morbo quem Gallicum Nuncupant* in 1497, soon after the disputation. On Gilino see Giuseppe Pardi, *Titoli Dottorali conferiti dallo Studio di Ferrara nei secoli XV e XVI*, Lucca, A. Marchi, 1901 (facs. repr.: Bologna, Forni, 1970), pp. 32–3, 48–9, 66–7, 84–5, 88–91, 94–5, 104–5, 110–11, 114–15; G. Pardi, *Lo Studio di Ferrara nei secoli XV e XVI*, Ferrara, Tip. Zuffi, 1903 (facs. repr.: Bologna, Forni, 1972), pp. 142; G. Pardi, ed., *Diario Ferrarese dell'anno 1476 fino al 1504 di Bernadino Zambotti* (henceforth *DFZ*) in Muratori, ed., *Rerum Italicarum Scriptores*, Città di Castello and Bologna, N. Zanichelli, vol. 24, pt 7 (in appendix) pp. 207, 261; See also Sudhoff, *The Earliest Printed Literature*, pp. XL–XLI; Cyril C. Barnard, 'The "De morbo quem gallicum nuncupant" [1497] of Coradinus Gilinus', *Janus*, 34, 1930, pp. 97–116.
51. On the Florentine Neoplatonist circle of Marsilio Ficino, see Arnaldo della Torre, *Storia dell'Accademia Platonica di Firenze*, Florence, Tip. G. Carnesecchi e figli, 1902; James Hankins, *Plato in the Italian Renaissance*, 2 vols, Leiden, Brill, 1990; Hankins, 'The Myth of the Platonic Academy of Florence', *Renaissance Quarterly*, 44 (3), 1991, pp. 429–75.
52. On the long career of this text, see Nancy G. Siraisi, *Avicenna in Renaissance Italy: the 'Canon' and Medical Teaching in Italian Universities after 1500*, Princeton, Princeton University Press, 1987.
53. On Rodrigo de Borja before and after becoming pope Alexander VI, see Pastor, *The History of the Popes*, vol. 5 (1898), pp. 375–523, vol. 6 (1898), pp. 3–181; Lacy Collison-Morley, *The Story of the Borgias*, London, G. Routledge and Sons, 1932, pp. 12–245; Michael Mallett, *The Borgias. The Rise and Fall of a Renaissance Dynasty*, London, Paladin, 1971, esp. pp. 79–227.
54. For a useful overview of the role of papal physicians in sixteenth-century Rome, see Richard Palmer, 'Medicine at the Papal Court in the Sixteenth Century', in Vivian Nutton, ed., *Medicine at the Courts of Europe, 1500–1837*, London, Routledge, 1990, pp. 49–78.
55. On Gaspar Torrella see José María López-Piñero et al., *Diccionario Histórico de la Ciencia Moderna en España*, 2 vols, Barcelona, Península, 1983, vol. 2, pp. 356–58; Jon Arrizabalaga, 'Práctica y teoría en la medicina universitaria de finales del siglo XV: el tratamiento del mal francés en la corte papal de Alejandro VI Borgia', *Arbor*, 153 (604–5), 1996, pp. 127–160: particularly pp. 131–3, 157; and the bibliography there referred to.
56. On Pere Pintor see López-Piñero et al., *Diccionario Histórico*, vol. 2, pp. 178–9; Arrizabalaga, 'Práctica y teoría', pp. 127–60: particularly pp. 130–31, 155–7; and the bibliography there referred to.
57. On the French Disease at the papal court of Alexander VI see Hesnaut

[pseudonym of Louis Thuasne], *Le Mal Français a l'Époque de l'Expédition de Charles VIII en Italie, d'après les Documents Originaux*. París, Marpon et Flammarion, 1886, pp. 49–50; Lorenzo Gualino, 'L'infezione celtica', *Storia Medica dei Romani Pontefici*, Turin, Minerva Medica, 1934, pp. 257–331.

58. Pere Pintor, *Agregator Sentenciarum Doctorum Omnium de Preservatione Curationeque Pestilentie*, Rome, 1499, (henceforth, *Agregator*). For Guy de Chauliac's opinion in this respect ('Scientiae enim per additamenta fiunt') see his *Chirurgia Magna*, Lyons, 1585, p. 1.
59. P. Pintor, *De Morbo Foedo et Occulto his Temporibus Affligente*, Rome, 1500 (henceforth *De Morbo Foedo*), sigs a3r, a3v–4r, a7v, d7v.
60. Gaspar Torrella, *Tractatus cum Consiliis Contra Pudendagram seu Morbum Gallicum*, Rome, 1497 (henceforth *Tractatus*), sig. a4v.
61. For a detailed account of the early names of the French Disease, see Jean Astruc, *De Morbis Venereis Libri Novem*, Venice, 1748, vol. 1, pp. 4–6. Some of these are more fully documented in Ernest Wickersheimer, 'Sur la syphilis aux XVe et XVIe siècles', *Humanisme et Renaissance*, 4, 1937, pp. 157–207, particularly pp. 159–75.
62. On Pico see Eugenio Garin, *Giovanni Pico della Mirandola. Vita e Dottrina*, Florence, Le Monnier, 1937, pp. 169–93; Shumaker, *The Occult Sciences*, pp. 16–27.
63. G. Torrella, *Dialogus de Dolore cum Tractatu de Ulceribus in Pudendagra Evenire Solitis*, Rome, 1500 (henceforth *Dialogus*), sig. a5v.
64. Giovanni Pico della Mirandola *Disputationes Adversus Astrologiam Divinatricem*, ed. by Eugenio Garin, 2 vols, Florence, Vallecchi, 1946–52, vol. 1, pp. 60–63.
65. He believed that God's anger was a continuing cause of the disease: Pintor, *De Morbo Foedo*, sig. b6r. For more information Pintor directs the reader to his *Agregator*, sig. b3v.
66. Pintor, *De Morbo Foedo*, sigs av, a1v, a7v–bv.
67. Pintor, *De Morbo Foedo*, sigs dr–dv.
68. Torrella, *Tractatus*, sigs a4v–b1r, c4v–d1r, e1r, e2r; *Dialogus*, sigs a6v.
69. Pintor, *De Morbo Foedo*, sigs er–e3v.
70. Pintor, *De Morbo Foedo*, sigs e3v–e4r, fv–f1r.
71. Pintor, *De Morbo Foedo*, sigs f1v–f3v.
72. Torrella, *Tractatus*, sigs. c3v, d2r, d4r–v, e1v–e2r, e2v, f3r; *Dialogus*, sigs e2r–v.
73. Pintor, *De Morbo Foedo*, sig. e5v.
74. Pintor, *De Morbo Foedo*, sig. er.
75. On Bertomeu Martí, see Pelegrín Luis Llorens-Raga, *Episcopologio de la Diócesis de Segorbe-Castellón*, 2 vols, Madrid, CSIC, 1973, vol. 1, pp. 237–42; Johann Burchard, *Diarium sive Rerum Urbanarum Commentarii (1483–1506)*, ed. Louis Thuasne, 3 vols, Paris, E. Leroux, 1883–85; vol. 2, p. 521; C. Eubel, *Hierarchia Catholica Medii et Recentioris Aevi*, 3 vols, 2nd edn, Munich, L. Regensbergianae, 1913–23 (facs. repr.: Padua, Il Messagero di S. Antonio, 1960), vol. 2, pp. 23, 55.
76. Pintor, *De Morbo Foedo*, sigs ev–e1r.
77. Pintor, *De Morbo Foedo*, sigs e1r–v.
78. Torrella, *Dialogus*, e6r.
79. P. Trapolino, *De Morbo Gallico Tractatus*, in Luigini, *De Morbo Gallico*, vol. 2, p. 47.

80. On 11 April, the Ferrarese anonymous diary announced that the corpse of someone accused of murder and robbery who had been hanged in Ferrara was transferred 'to physicians in order to be dissected (*per fare nothomia*) with the purpose of seeing where the French pox came from, since he suffered from this disease'. See *DFA*, pp. 199–200.
81. Dall'Aquila, *Interpretatio*, ff. 186r–v.
82. See *Morbi Gallici Curandi Ratio*, Basel, 1536: the collected tracts of P. Mattioli, J. Almenar, N. Massa, N. Pol, Benedictus de Victoriis and A. Bolognini.
83. Nicolò Massa, in *Morbi Gallici Curandi Ratio*.
84. Gabriele Falloppio, *Opera Omnia*, Frankfurt, 1600, p. 682; Giovanni Pascale, *De Morbo Quodam Composito*, in Luigini, *De Morbo Gallico*, p. 192.
85. See Leonhard Schmaus, *De Morbo Gallico Tractatus*, in Luigini, *De Morbo Gallico*, vol. 1, p. 331; Antonio Scanaroli, *Disputatio Utilis de Morbo Gallico et Opinionis Nicolai Leoniceni Confirmatio contra Adversarium eandem Opinionem Oppugnantem*, Bologna, 1498 (reproduced in facsimile in Sudhoff, *The Earliest Printed Literature*, pp. 315–45): p. 320 (sig. a3v).
86. See Trapolino in Luigini, *De Morbo Gallico*, vol. 2, p. 44.
87. Trapolino in Luigini, *De Morbo Gallico*, vol. 2, p. 44.
88. On the 'whole substance' theory, see Linda Deer-Richardson, 'The Generation of Disease: Occult Causes and Diseases of the Total Substance', in Wear, French and Lonie, eds, *The Medical Renaissance*, pp. 175–94, 326–30.
89. Falloppio, *Opera Omnia*, p. 682.
90. G. Vella and Trapolino use *fomes*. See Luigini, *De Morbo Gallico*, vol. 1, p. 179, and vol. 2, p. 44.